Open data is data freely available — it can be used, reused and redistributed by anyone.
You are already using open data. When we check the weather we’re using data from NOAA and apps on our smartphones use transportation data to tell us when the next bus or train will arrive. We use open data to see how our schools are performing and how safe our neighborhoods are. Government open data enables people to make informed decisions about our lives.

I’ve met with numerous elected officials across the country and no matter the size or location of their government, all seek ways to improve the quality of life for their citizens, spur economic development, and make operations more efficient. Government open data can help.

When President Obama took office, he immediately sent a memo to his entire cabinet expressing an unprecedented commitment to transparency, public participation, and collaboration. Seven years later, states continue to recognize the value of open data.

Open data helps to build public trust and can help leaders allocate resources in strategic ways. Eighty percent of states provide an open data site to their citizens and forward-thinking governments are using those assets to make data-driven decisions.

Don’t take my word for it. Listen to your peers at the federal, state, and local levels. Explore their stories to learn how they used open data to solve problems. Your peers have developed best practices and are enthusiastic to share lessons learned with other governments.

Findings from the latest Open Government Data Benchmark Study show that open data is here to stay. The vast majority of governments are at least opening their “most important” data, with 41% of government respondents committing to making as much data open as possible. And, 61% of people surveyed said they were more likely to vote for a politician who champions data transparency.

From elected officials to program managers to government employees in the field, this guide helps us get on the same page when it comes to open data. It enables us to talk about innovative ways to embrace technology and move governments forward by using government open data.

Together, we examine the foundational principles of open data. Whether governments are looking to increase citizen satisfaction, create a robust digital environment to drive job creation, or maximize the impact of their limited resources, open data can help leaders achieve their goals.

Innovation happens over time with support and advocacy. It happens when people are committed to improving day-to-day activities in their environment, at the local, state and federal level. You are on a journey to become a more agile and efficient organization. I hope this guide helps facilitate the conversation and supports your collaboration with your peers and other governments.

—Kevin Merritt

“Open data helps to build public trust and can help leaders allocate resources in strategic ways. Eighty percent of states provide an open data site to their citizens and forward-thinking governments are using those assets to make data-driven decisions.”
Socrata Open Data
Putting insights into the hands of the public

Socrata’s cloud-based solution allows government organizations to put their data online, make data-driven decisions, operate more efficiently, and share insights with citizens.

GET STARTED WITH OPEN DATA

How does open data improve performance? Download the guide.

www.socrata.com
Open data programs can have tremendous benefits for the public sector. They reduce data redundancy, promote collaboration across agencies, and let citizens and activists build applications from government data.

But do you really know what open data is, or what kind of data your community actually needs? And what really makes a good open data program?

We’re here to help you answer those questions and more. This brief from GovLoop will give you an overview of open data in the public sector, explain why it matters, and direct you to case studies and how-to’s that will get you where you need to be today.

Who this guide is intended for?

Open data beginners and experts alike.

And because you work for government, open data affects your professional life as well. Public-sector open data, as used by the government, leads to better citizen engagement, increased transparency for government operations, and better decision-making. Open data also helps agencies make informed decisions about health care, sustainability and transportation. Making data open and accessible to the public enables the government to tap the knowledge and expertise that exists far beyond its walls — the benefits are endless.

If you’re an open data expert, we think you’ll find some useful nuggets in this brief too. Though you may know the history of public-sector open data inside and out, and already understand what an API is, we’ve made sure to include some relevant case studies here that can help you learn even more. Also, this document can serve as a convenient handout for your colleagues who are always asking you to explain why open data matters to them.

So let’s get started. First up: an overview of open data.
An open data overview

Get ready: In this section, we’ll teach you:

• The definition of open data
• Describe some current examples and brief use cases for it
• Help set the context for why open data in government matters today more than ever

“Making information resources accessible, discoverable, and usable by the public can help fuel entrepreneurship, innovation, and scientific discovery — all of which improve Americans’ lives and contribute significantly to job creation. For example, decades ago, the Federal Government made both weather data and the Global Positioning System (GPS) freely available to anyone. Since then, American entrepreneurs and innovators have used these resources to create navigation systems, weather newscasts and warning systems, location-based applications, precision farming tools, and much more.”

—Barack Obama

This excerpt is from President Obama’s 2013 OMB Memorandum M-13-13, Open Data Policy — Managing Information as an Asset, and we think it does a pretty good job of explaining why open data has become such a focus at all levels of government over the past several years.

Though the term “open data” is used frequently, what it is and why it’s important isn’t always clear.
First up: What is open data?

Data is any information that is generated or collected. In government, that might include any of the following: temperature measurements gathered by NOAA; the number of flu cases across the nation as reported by the CDC; product recalls from the FDA; census results; the number of traffic accidents in a given state; or one city’s government budget.

This data can come in Excel spreadsheets, databases, or PDF files, among other formats, and often it may be filtered to highlight certain data in specific ways. For example, you can view census data filtered by ZIP code or by year.

So that’s data. But what does “open” mean? The definition is pretty straightforward: Open data is data that is freely available — data that can be freely used, reused and redistributed by anyone.

For far too long, the government’s data assets have not been open — and that’s a problem, because the government produces a ton of data. But those data sets have been locked away in siloed systems, in less-than-ideal formats, and there have been few incentives for agencies to share data across bureaus or with the public. That has left a lot of valuable data just sitting unused, not helping anyone: Taxpayers didn’t know how their money was being spent, and government employees couldn’t analyze data to make smarter decisions or share insights with colleagues across agencies.

As the comprehensive Socrata Field Guide to Open Data notes:

“We’re accustomed to getting flight arrival information, restaurant ratings, and real-time news from across the globe instantly online. But, we can’t easily find out if crime in our neighborhoods is going up or down, what’s in the next budget, or whether government programs are working as expected. Access to data and information has permeated our daily lives, yet a great deal of quality of life information is idling in government database silos.”

But that’s changing. The open data movement is driving government to make its data more accessible to the public in formats that people can use. As a result, entrepreneurs and everyday citizens are developing applications that benefit both the public and government.

So now you’ve got the what and the why. To understand even more, here’s an open data historical timeline; some principles of open data; and an open data glossary.

What’s the big deal?

Imagine what the public and businesses could truly do — and truly change — if all government data were open. Citizens would know more about the budgets and statistics of their governments, and could become more engaged with this transparency. Businesses could build applications on top of this data, making it easier for constituents to access it and innovate with it, thereby stimulating the economy. Government employees could analyze historical data to make better decisions and become more efficient in the services they create. In short, the benefits would be enormous.

What’s happening now?

So now you’ve got the what and the why. To understand even more, here’s an open data historical timeline; some principles of open data; and an open data glossary.
The term "open data" appeared for the first time in 1995, in a document from an American scientific agency that discussed the disclosure of geophysical and environmental data.

Then, in December 2007, in Sebastopol, California, a group of thought leaders gathered to discuss and define the concept of open public data. They understood the Internet’s potential and the value of making data, particularly government data, available as a public resource, just as our natural resources are shared for the common good.

Less than two years later, on his first day in office, President Obama signed the Memorandum on Transparency and Open Government, which stated: "Information maintained by the Federal Government is a national asset. My Administration will take appropriate action, consistent with law and policy, to disclose information rapidly in forms that the public can readily find and use."

In May 2009, Data.gov was born, with the stated purpose of increasing public access to high-value, machine-readable data sets generated by the executive branch of the federal government.

And on May 9, 2013, President Obama signed an executive order that made open and machine-readable data the new default for government information.
An open data glossary

The information in this glossary is taken from Data.gov. We've chosen to highlight only a few terms, but you can see the full list here.

API
An Application Programming Interface, or API, is a set of software instructions and standards that allows machine to machine communication — like when a website uses a widget to share a link on Twitter or Facebook. (source: www.digitalgov.gov/category/code/api/)

Data
A value or set of values representing a specific concept or concepts. Data become “information” when analyzed and possibly combined with other data in order to extract meaning and to provide context. The meaning of data can vary depending on its context. (source: Federal Enterprise Architecture: Data Reference Model)

Dataset
A dataset is an organized collection of data. The most basic representation of a dataset is data elements presented in tabular form. Each column represents a particular variable. Each row corresponds to a given value of that column’s variable. A dataset may also present information in a variety of non-tabular formats, such as an extended mark-up language (XML) file, a geospatial data file, or an image file. (adapted from: Wikipedia)

XML
XML (Extensible Markup Language) is a general-purpose specification for creating custom markup languages. It is classified as an extensible language, because it allows the user to define the mark-up elements. XML’s purpose is to aid information systems in sharing structured data especially via the Internet, to encode documents, and to serialize data. (source: Wikipedia)

What makes open data open?

In October 2007, 30 open-government advocates met in Sebastopol, California, to discuss how government could open electronically stored government data for public use. The principles they came up with have stood since then as those that best empower the public’s use of open data.

Government data shall be considered open if it is made public in a way that complies with the 8 principles below:

1. Complete
   All public data is made available. Public data is data that is not subject to valid privacy, security or privilege limitations.

2. Primary
   Data is as collected at the source, with the highest possible level of granularity, not in aggregate or modified forms.

3. Timely
   Data is made available as quickly as necessary to preserve the value of the data.

4. Accessible
   Data is available to the widest range of users for the widest range of purposes.

5. Machine-processable
   Data is reasonably structured to allow automated processing.

6. Non-discriminatory
   Data is available to anyone, with no requirement of registration.

7. Non-proprietary
   Data is available in a format over which no entity has exclusive control.

8. License-free
   Data is not subject to any copyright, patent, trademark or trade secret regulation. Reasonable privacy, security and privilege restrictions may be allowed.

Now that you’ve learned a few of the basic facts about open data — what it means, why it’s important that government focus on it, and a bit of the history behind it — we’re going to focus on what the landscape of open data in the public sector looks like today.
Let's focus on what open data in government looks like today. Here, we'll explain some key statistics about open data, discuss why it's become an issue, and talk briefly about open data superstars in government and how they're succeeding.

"Americans have mixed hopes about government data initiatives. People see the potential in these initiatives as a force to improve government accountability. However, the jury is still out for many Americans as to whether government data initiatives will improve government performance."

—Pew Research Center

Why have open data initiatives have become so popular in the past few years? Unfortunately, it's partially because the public is more disengaged with and distrustful of the government than ever, and many see open data efforts as a path toward transparency and connection that will help repair citizens' relationships with and views of the public sector. The hope is that by releasing their troves of data, and encouraging citizens to make use of it and understand it, government might be seen as more transparent and accountable.

This sentiment was made clear quite recently in a 2015 Pew Research Center report about open data and government. These figures speak for the potential open data holds to transform the way government is perceived.

Clearly, this opportunity to get open data right is a critical one. Let's take a look at some stats that will show us where governments stand today in their open data efforts.
Public-sector open data statistics

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Fortunately, it seems that government has started to understand the critical importance of investing in open data efforts. A large number of cities, counties, and states have open data sites.

- Cities.Data.gov
- Counties.Data.gov
- States.Data.gov

And according to a recent Socrata open data benchmark report, “A plurality (41%) of all government respondents say their goal is to make as much data open as possible, with another significant proportion (48%) saying they focus on the ‘most important’ and useful data. A small fraction do the minimum legally required (11%). Taken together, the vast majority of governments are at least opening the “most important” data.”

State of Washington

The State of Washington is known for great coffee, apples, and now, open data. As the home to many pioneering companies, it is no surprise that the State of Washington was one of the first states in the country to adopt an Open Data Portal. Located at data.wa.gov, the site contains multiple population-related visualizations, statistics on wildlife preservation, and information about Washington State congressional districts.

Montgomery County, Maryland

The Montgomery County Open Data Portal provides residents with unparalleled access to county data covering many topics. The potential of this data was most recently demonstrated during the 2012 election, when voters who were eager to find information on the location of early voting centers drove heavy traffic to the Montgomery County Open Data Portal. This resulted in increased engagement and transparency during the 2012 elections.

Department of Health and Human Services

How healthy is it to share health information? Ask the innovative team at the Office of the Assistant Secretary for Planning and Evaluation at the Department of Health and Human Services. To increase public awareness on a number of health indicators, they have created an open data portal called the Health System Measurement Project that tracks government data on key U.S. health system indicators, such as the estimated number of young adults with health insurance coverage, percentage of employers offering health insurance by firm size, and other data.
By now, hopefully, you’ve been convinced of the value of open data in government. Releasing the massive amount of data that the public sector both creates and stores is a true boon to society, giving taxpayers transparency, allowing agencies to make smarter decisions, and empowering entrepreneurs to innovate and build new products using that data.

But if you don’t ask the right questions about the issues you face, you may not find the right data to help solve your most pressing problems. We sat down with Jeff Press, Practice Leader, Government Performance at Socrata, an industry leader in public-sector open data, to discuss what this issue of asking the right questions means.

“Here at Socrata, our primary aim is to connect data to people,” Press said. “And we want to do that in a way that answers the questions from citizens, taxpayers, internal customers, and external customers of government.”

Press pointed out that data released by the government is useful only if it’s accessible and consumable.

“So to make that data most useful, we first, before anything else, need to figure out how to explicitly define the questions that we want to answer, or the problems that we want to solve. Once we do that, we have the opportunity to look for data to help us answer those questions or solve those problems, and then use it to make better decisions.”

Fortunately, asking the right questions to make the best use of your data is easier than you might think.

“The questions you should ask are really simple: It could be something like, why did crime go up 5 percent last month in District One? And once you ask that question, then you have the opportunity to look at historical data, or trend data, that might lead you to a really insightful explanation and, eventually, a solution.”

But asking the right questions about data needs to start at the top, Press said.

“Senior leaders are responsible for asking these types of questions to better manage programs. The first is, what questions do we have that we don’t have the answers to right now? You start there. Then think about what your biggest problems are — the things that you want to solve, but can’t or don’t yet know how to.” This could take the form of a question, Press explained; for instance, why did it take a whole year to get a business license, or why are traffic accidents spiking in a particular area?

“And once you ask that question, then you go on your data hunt, and you find out what data do you need to uncover to answer those questions,” he said. “For something like a business license, it could be things like application data, types of applications, wait times, backlog, or applicant data.”

It’s also important to search contextual data as well, which can help you better understand your larger environment, Press noted. “In the case of a business license, that contextual data could help us figure out median household income in an area or the number of new businesses — and ultimately new jobs — created.”

When you begin your data journey in this way, Press explained, you’ll be able to use the data in truly incredible ways, and ultimately be able to better tell your stories and communicate the data’s impact and value to your constituents.

“At the end of the day, that’s really what it’s all about. Open data in and of itself is really only a buzzword. It’s all about knowing that the data that’s being made open is used to drive some real impact for citizens, like safer neighborhoods, cleaner streets, and a healthier society. And when you ask the right questions, you can achieve those things.”
Learning From Others: Two Open Data Case Studies

A lot of folks in government have been doing great things with open data, and the rest of us could learn a lot from them. That’s the point of this section, where we’ll focus on how one federal agency and one Pacific Northwest city are opening their data, and what it’s meant for them and the citizens who use it.

ATF Open Data: Improving Public Understanding and Reducing the FOIA Backlog

Starting in early 2013, the Bureau of Alcohol, Tobacco, Firearms and Explosives launched an API to make aggregated trace data on firearms available via ATF.gov. This release meant ATF was the first agency inside the Department of Justice to join the open data movement, leading the way for broader DOJ participation.

That release has been so successful that ATF is now deploying a full open data portal. “In being one of the first to comply with the White House’s initiative,” said Jim Burch, Assistant Director of Public and Governmental Affairs at ATF, “we have the perspective to see how much more we can be doing related to releasing data about our priority mission areas, including firearms, explosives, and arson.”

It doesn’t take more than a cursory look at the evening news to understand why ATF data on firearms licenses, trace recoveries, and types of firearm crime are some of the most in demand among government information. The ATF is also one of the most heavily regulated agencies in terms of what information it can release. This oversight, and the sensitive nature of portions of the ATF’s mission, create a seemingly endless stream of Freedom of Information Act (FOIA) requests for the agency.

For decades, the ATF released data on paper or in a static electronic format, as a PDF file. But the bureau realized that information in a static file format did not allow the firearms
Karen Conrad, Webmaster in Redmond’s Information Services Department, said the challenge was a technical one for Redmond. “Budget data could not be uploaded into data.redmond.gov in a way that would make it useful and understandable to the public. The city considered building its own website to provide this information, but doing so would be costly and time consuming.”

So, Conrad said, when Redmond discovered Socrata’s Open Budget App, it made far more sense to employ that solution than to have the city create its own. “It would have been a huge amount of work to put our budget data on our open data portal. I was glad to find that there was an app with budget buckets which we could easily populate. It would have been impossible to break our budget down into separate data sets, build it back up again, and create the visualizations we get with the Socrata Open Budget tool.”

Redmond’s budget site will create transparency for the city council and the community, which Files hopes will reduce the number of budget-related questions coming into the Department of Finance. “Currently, we spend a lot of time going back and forth trying to determine what citizens are looking for. Now, they will be able to look for themselves.”

Her department answers a lot of calls from businesses interested in taxes, other cities who are interested in Redmond’s revenue and expenditures, and from community members who might be working on a civic projects or are just curious.

The Department of Finance expects the site will also help Redmond’s City Council members, who will now have underlying budgetary data readily available.
This takeaway section will give you steps for open data implementation as well as tips and best practices for honing your open data policies.

**Open Data Cheat Sheet**

Talking points

1. Releasing data in an open format can dramatically reduce the amount of time and effort it takes to respond to open-record/FOIA requests. It will save staff time and money, freeing employees to work on mission-critical items. Publishing frequently requested data in an open format allows people to self-serve, and preserves internal staff time for more pressing needs.

2. When governments release data, apps happen. Innovation happens. Citizens build on government data to create amazing technologies that help others in ways your agency may not have the money, knowledge, or wherewithal to do.

3. Releasing your data proves to your constituents that you are making a concerted effort to be transparent, which goes a long way toward rebuilding trust in government.

4. Open data can end up saving you a lot of money, in ways you might not expect. Read this case study about how open data saved Canada $3.2 billion in charity tax fraud.

5. Open data can help elected officials. In fact, 61 percent of people said they were more likely to vote for a politician who champions data transparency, according to Socrata’s "Open Government Data Benchmark Study."

6. Finally, it’s the right thing to do. It’s obvious that data makes change happen and helps make lives better. Opening your data will only accelerate that.
Open data best practices

1. Identify your open data champions

“One of the first things that we did was find the internal advocates, who were the people who didn’t need any cheerleading and were on board, those were the folks who knew more or less the low-hanging fruit,” said Mike Kruger, Director of Digital Engagement at the Department of Commerce. “Once we got our internal champions, we got the low-hanging fruit, some quick wins that helped to guide more strategic questions on our vision.”

2. Talk with data users

By talking with users of their data, agency officials will know what data users find valuable and how they plan to use the data. This will determine the best method of publication — whether via PDF, through an application programming interface (API) or another platform. “If you open a data set and no one can use it, is it of any real value?” Kruger asked. “It’s great to know your data is being used. We get to go back and say to the data owners and data producers, ’This is being used for these purposes.’ That feels good.”

3. Get senior leadership buy-in

One of the reasons that some open data efforts are more successful than others is because those at the top are leading the charge. Having support from senior leadership is important, because at some point you’re going to need money, resources and a commitment in time to do things that aren’t going to happen at the worker level.

4. Focus on education

Become well versed in open data policies and executive orders before embarking on any open data project. Project Open Data provides comprehensive implementation guidelines for your agency to capture all angles of open data policies. In addition, DigitalGov.gov offers ample training materials.

Five questions to ask before starting

1. What is the new value this dataset is providing to our community?

2. How have we engaged with our end users and can we deliver on their needs?

3. Have we conducted an inventory of our data and what is currently public?

4. What are the barriers the developers, citizens or governments face to leverage our data, and how can we fix them?

5. Who are our data champions and how can we gain agency-wide support?

As we noted earlier, the data you’ll find and use is only as good as the questions you’ll be asking up front. Here are some starter Qs:

Open data resources

Here are some links to get you up to speed on open data.

The Open Data Playbook for Government [GovLoop]
Online Learning Course: Seizing the Open Data Opportunity [GovLoop]
Online Learning Course: Open Data Fundamentals [GovLoop]
Open Data Field Guide [Socrata]
Project Open Data [The White House]
The Open Data Handbook
Open Government Data [The Open Knowledge Foundation]
An Open Data FAQ [Sunlight Foundation]
Thanks to Socrata for their support in producing this public-sector resource.

About Socrata

Socrata is the global leader in software solutions that are designed exclusively for digital government. Socrata’s cloud-based, SaaS solutions, supported by the Socrata Open Data Network and Socrata Partner Ecosystem, deliver unprecedented data-driven innovation and cost savings for hundreds of public-sector leaders and millions of their constituents worldwide.

Learn more about Socrata here: www.socrata.com

About GovLoop

GovLoop’s mission is to inspire public sector professionals by serving as the knowledge network for government. GovLoop connects more than 250,000 members, fostering cross-government collaboration, solving common problems and advancing government careers. GovLoop is headquartered in Washington, D.C., with a team of dedicated professionals who share a commitment to the public sector.

For more information about this report, please reach out to info@govloop.com.
The open data movement is gaining strength every day, and the lessons learned by its pioneers are now coming to the forefront. That means it's more important than ever that you understand what open data means for you, your organization, and the citizens you serve — and how it can improve all of your lives. We hope that this guide has helped you better comprehend the issues at hand, and through advice from the best in the field provided you with proven tools to reach success with your own open data initiative.